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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,907	10/29/2003	Tetsuhito Tsukagoshi	Q78094	4502

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EXAMINER

FISCHER, JUSTIN R

ART UNIT PAPER NUMBER

1733

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,907

Applicant(s)

TSUKAGOSHI ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-21, 23-28 and 30-34 is/are pending in the application.
- 4a) Of the above claim(s) 23-28 and 30-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/493116.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>102903</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 12-21, drawn to a tire having a wrapped carcass and a rubber layer, classified in class 152, subclass 539.
 - II. Claims 23-28, drawn to a method of forming a tire, classified in class 156, subclass 110.1.
 - III. Claims 30-34, drawn to an apparatus for bending a carcass, classified in class 156, subclass 400.
2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the process can be used to make a materially different product, for example a tire devoid of a rubber layer controlling shearing strain.
3. Inventions I and III are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case, the apparatus can be used to make a materially different product, for example a tire devoid of a rubber layer controlling shearing strain.

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4. Inventions II and III are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process does not require the specific apparatus of invention III- for example, a specific bladder assembly can be used to bend the carcass structure.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Steven Gruskin on May 10, 2005 a provisional election was made without traverse to prosecute the invention of a tire having a rubber layer, claims 12-21. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-28 and 30-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 12, 15, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell (GB 1,000,113) and further in view of Fukuzawa (JP 5-96915). Powell discloses a pneumatic tire construction having a radial carcass arrangement 4 formed of steel reinforcing elements (Page 1, Lines 75-85), wherein said carcass is wrapped around a bead core 2 and terminates adjacent the radially outer surface of said bead core. In this instance, the carcass end is locked between said radially outer surface of the bead core and a bead filler 3. Figure 1 further depicts a bead reinforcing layer 8 that extends along the axially outer surface of said bead filler. The reference, though, is silent as to the inclusion of a rubber layer between the bead filler and the bead reinforcing layer. In any event, it is extremely well known to include such a rubber layer in order to provide cut/separation resistance and ultimately improve tire durability, as shown for example by Fukuzawa (Figure 1). It is emphasized that rubber layers are commonly included adjacent the ends of carcass plies and bead reinforcing layers for the benefits detailed above, particularly the desire to eliminate the concentration of stresses at the end portions of either tire component- in the tire of Powell, the end portion of the bead reinforcing layer is the only exposed end portion due to the locked carcass construction. As such, one of ordinary skill in the art at the time of the invention would be amply motivated to include a rubber reinforcing layer in the tire of Powell.

With respect to claim 15, the claim defines an extremely broad range in which the rubber reinforcing layer can have a thickness as small as 0.30 times the bead reinforcing layer and as large as 5 times the bead reinforcing layer. Based on

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Fukuzawa, it appears that the rubber reinforcing layer is slightly thicker than the bead reinforcing layer. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire of Powell within the claimed range (appears to be suggested by Fukuzawa).

Regarding claims 18 and 20, Figure 1 of Powell clearly depicts a "recess zone" in which the bead width decreases (slightly outward of the middle of the bead filler). In regards to claim 20, the recess zone is located radially outward of the outer surface of the bead portion (identified as possible alienation point).

As to claim 19, the tire of Powell does not appear to contain any significant variation in width outward of the lower bead region and as such, one of ordinary skill in the art at the time of the invention would expect the relevant the "region" to have a gauge substantially equal to the gauge at the maximum section width height.

With respect to claim 21, the width of the bead region through a center of a bead core is larger than a width of the bead core through the alienation point- as noted above, alienation point can be viewed as that point just below the recess zone, in which case the width at the alienation point would be smaller than the width as measured through the center of the bead core.

9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell and Fukuzawa as set forth in the rejection of claim 12 above and further in view of Mechanics of Pneumatic Tires. While Powell is silent as to the hardness of the sidewall and the bead filler, Mechanics of Pneumatic Tires evidences the common tire structure in which the bead filler is significantly harder than the sidewall (Pages 881-

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884). One of ordinary skill in the art at the time of the invention would have expected the tire of Powell to demonstrate such a relationship as it is consistent with the common structure of tires. In regards to the rubber reinforcing layer, Fukuzawa suggests that it has a hardness that is below the hardness of the hard bead filler- given the fact that the filler of Powell is a single component, one of ordinary skill in the art at the time of the invention would have expected it to be of a high hardness. Thus, the rubber reinforcing layer would have a hardness between that of the sidewall and the bead filler.

As to claim 14, Mechanics of Pneumatic Tires provides several examples in which the bead filler has a hardness that is at least 1.4 times that of the sidewall. It is emphasized that the examples in Mechanics of Pneumatic Tires provide a general relationship between the respective tire components, such that tires having a greater ratio are not excluded. Additionally, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed ratio.

10. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Powell and Fukuzawa as applied in claim 12 above and further in view of Miyazono (JP 9-99715) and Kaga (US 5,196,077). In describing the rubber reinforcing layer, Fukuzawa is silent as to the positioning of the radially outer end. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to extend said rubber reinforcing layer beyond the end of the bead reinforcing layer in order to optimize the end portion of said layer (eliminate separation resistance). Miyazono (Abstract and Figures 1-6) and Kaga (Abstract and Figure 1) provide examples of similar tire constructions in which a rubber reinforcing layer is arranged between a bead

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filler and a bead reinforcing layer, wherein said rubber reinforcing layer completely covers the end portion of said bead reinforcing layer (slightly protrudes beyond bead reinforcing layer). Thus, one of ordinary skill in the art at the time of the invention would have had ample motivation to extend the rubber reinforcing layer beyond the end portion of the bead reinforcing layer. Lastly, applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed arrangement.

As to claim 17, Miyazono clearly depicts a variety of arrangements in which the rubber reinforcing layer has a varying radial extent, including embodiments in which said layer extends to a region adjacent the upper part of the bead core- in such an instance, the rubber reinforcing layer would contact the carcass turnup portion.

11. Claims 12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaga and further in view of Miura (JP 05096905). Kaga teaches a pneumatic tire construction having a radial carcass structure formed of steel reinforcing elements, wherein a rubber reinforcing layer 6 is arranged between a bead filler 5b and a bead reinforcing layer 3b. In this instance, though, the carcass turnup end is not disposed between the bead core and the filler. Miura, though, recognizes the desire to form the carcass with such a turnup arrangement in order to increase tire durability and reduce tire weight (Abstract and Figure 1). As such, one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire of Kaga with a locked bead construction.

As to claim 15, the claim defines an extremely broad range in which the rubber reinforcing layer can have a thickness as small as 0.30 times the bead reinforcing layer

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and as large as 5 times the bead reinforcing layer. Based on Kaga, it appears that the rubber reinforcing layer is slightly thicker than the bead reinforcing layer (described as being between 1 and 4 times the carcass cord diameter). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire of Kaga with the claimed range.

Regarding claims 16 and 17, the lower end of the rubber reinforcing layer approximately corresponds to the upper part of the bead core- it is noted that Kaga only suggests that the height "h1" is smaller than either of the additional heights. Based on this general teaching, one of ordinary skill in the art at the time of the invention would have additionally found it obvious to position the lower end of the rubber reinforcing layer at a height that directly corresponds to that of the bead core absent any conclusive showing of unexpected results. In such an instance, the rubber reinforcing layer would be expected to contact the carcass turnup portion.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maeda (JP 64-30808) teaches a pneumatic tire construction have a locked carcass assembly and a bead reinforcing layer.

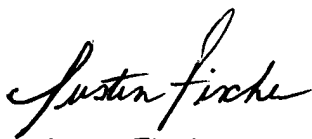
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Justin Fischer". The signature is written in a cursive, flowing style.

Justin Fischer

May 11, 2005